

FOR OFFICIAL USE ONLY

JPRS L/9617

19 March 1981

West Europe Report

(FOUO 16/81)



FOREIGN BROADCAST INFORMATION SERVICE

FOR OFFICIAL USE ONLY

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

COPYRIGHT LAWS AND REGULATIONS GOVERNING OWNERSHIP OF
MATERIALS REPRODUCED HEREIN REQUIRE THAT DISSEMINATION
OF THIS PUBLICATION BE RESTRICTED FOR OFFICIAL USE ONLY.

FOR OFFICIAL USE ONLY

JPRS L/9617

19 March 1981

WEST EUROPE REPORT

(FOUO 16/81)

CONTENTS

THEATER FORCES

FEDERAL REPUBLIC OF GERMANY

- SPD Problems With Tornado, TNF, Defense Budget Continue
(Mario R. Dederichs, Werner Heilemann; STERN, 5 Feb 81) 1

COUNTRY SECTION

FEDERAL REPUBLIC OF GERMANY

- Poll Shows CDU Ahead in West Berlin
(STERN, 29 Jan 81) 7
- Journal Probes Motives of Rioting Youth
(Heinrich Jaenecke; STERN, 12 Feb 81) 10
- Housing Minister on Housing, Remedies
(Dieter Haack Interview; STERN, 22 Jan 81) 12

FRANCE

- Giscard's Political Enemies Press Criticism of Him
(LE NOUVEL OBSERVATEUR, 2 Feb 81) 15
- Forthcoming Ariane Launch Date Narrowed Down
(Pierre Langereux; AIR & COSMOS, 7 Feb 81) 20
- 'Contradictions' in Nation's Arms Export Policy
(Michael Gurfinkiel; VALEURS ACTUELLES, 9 Feb 81) 28
- Weapons Manufacture Quality Control Measures Described
(Lucien Cruchant; ARMEES D'AUJOURD'HUI, Jan-Feb 81) 32
- Electromagnetic Signatures Studies Outlined by Engineers
(Philippe Gadenne, et al.; ARMEES D'AUJOURD'HUI, Jan-Feb 81) 35
- Briefs
PCF Sees Invasion Possible 40

- a -

[III - WE - 150 FOUO]

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

THEATER FORCES

FEDERAL REPUBLIC OF GERMANY

SPD PROBLEMS WITH TORNADO, TNF, DEFENSE BUDGET CONTINUE

Hamburg STERN in German 5 Feb 81 pp 25-28

[Article by Mario R. Dederichs and Werner Heilemann: "Three Rebels on the Hit List"]

[Text] They refuse to go along with the Chancellor's arms buildup policy: leftwing SPD Bundestage delegates Manfred Coppik, Klaus Thuesing and Karl-Heinz Hansen. But their attacks upon Helmut Schmidt did not serve to trigger the necessary debate within their fraction; rather, they have become the target of right-wing outrage. Now they are to be put on ice...

Words of encouragement appeared like a ray of sunshine out of thunderstorm clouds. Having been badmouthed by friend and foe alike, Minister of Defense Hans Apel had recently been toying with the thought of making good on a longtime threat of his: "If the party leaves me out in the cold, I will resign my office."

It has not come to that yet. Rather than getting more abuse for armament blunders and for the financial scandal involving the Tornado, he felt the presence of a certain amount of restraint within his own ranks last week. Federal Chancellor Helmut Schmidt reassured him: "Hans, I will support you," though he immediately qualified this by adding: "But that does not mean that I agree with all your actions." Vice Chancellor and coalition partner Hans-Dietrich Genscher too signaled covering fire: "You can count on me, Mr Apel."

Even within the SPD fraction, leftwing critics like Bavarian delegate Rudi Schoefberger suddenly showed him "respect" and former Young Socialists' chief Gerhard Schroeder called Apel's justifications for an enlarged arms inventory "factual and acceptable." When Kiel's Norbert Gansel tried to accuse the Hardthoehe chief of partial responsibility for building submarines for Chile, he was stopped in his tracks by some of his partisans: "Everybody knows that he had nothing to do with it." Finally, SPD chief Willy Brandt showed his support for the embattled Hamburger in the Bundestag: "We shall not abandon him, not even when this becomes difficult."

¹
FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

The Bundeswehr boss can ascribe this surprising show of support to an attack by 24 Bundestag delegates upon the record breaking defense budget of DM 41.2 billion and to the realization that in Apel's functional area there has accumulated an explosive force which embroils not only his colleagues but which threatens to destroy the social-liberal government coalition.

It is no longer an issue involving the minister and his expensive Tornados. What is involved now is the governing capability of the German Social Democrats. Chancellor Helmut Schmidt's head is therefore on the line too. Without the SPD fraction's approval of the armament boom he cannot remain the head of a coalition whose FDP junior partner objects to any defense budget reduction as being an irresponsible diminution of defense capability.

In view of this, none of the comrades should have been surprised when the head of the government scared the SPD fraction prior to the budget deliberations with the following announcement: "I realize that I am looking for a vote of confidence." The target of this remark was the discussion of a motion by 24 Social Democrat delegates to cut DM 1 billion from the defense budget in favor of development assistance.

The chancellor was not alone in his fight. Fraction chief Herbert Wehner too implored the dissidents by conjuring up a vision of the future: "We do not want a government composed of Social Democrats and Free Democrats to fall because one part of it declares: 'We are no longer participating.'" Minister of Foreign Affairs and FDP chief Hans-Dietrich Genscher even seemed to detect a violation of "indispensable" obligations of the coalition: "I certainly hope that this is not a case of serious intentions." Genscher's "running dog" Juergen Moellemann was allowed to be even more vociferous. The liberals, he barked BILD, are determinedly against any defense cuts; but for that, "the entire social-liberal coalition in Bonn would be endangered."

The authors of the motion backed off quickly. They felt that they had been completely, and deliberately misunderstood. Bundestag newcomer Gerhard Schroeder attempted to pacify the irritated colleagues: "We are loyal and have no intention whatever of impairing the government's freedom of action." They wanted to derail neither the budget nor the Chancellor but, according to spokesman Schoefberger's statement to STERN, merely wished to "show good will."

Despite their professions of loyalty the 24 were treated like lepers. The chancellor seemed to think that one of them required a particular "disinfection" procedure. Prior to being permitted to assume his new position as parliamentary state secretary in the Ministry for Education and Science, SPD delegate Eckart Kuhlwein had to give a formal promise to the chancellor's state secretary that he would in the future completely adhere to government policy and that he would participate in "opinion-forming processes" only in a nonpublic manner. Still, this special loyalty oath was not enough to satisfy the right wing of the fraction. In a "dear Helmut" letter, instigated by "sewer worker" Brigitte Traupe, they were "most surprised" to see Kuhlwein "on the government bench." More than 20 signatories affronted the chancellor: "We would not have thought that such a thing is possible."

FOR OFFICIAL USE ONLY

Are There Only Painted Corpses in the Bundestag?

Before the excitement had fully abated, a nasty article by SPD extreme leftwinger Karl-Heinz Hansen about the Schmidt government's defense and arms export politics appeared in Hamburg's leftwing KONKRET magazine and shocked the nervous Social Democrat community. Hansen had written the article several weeks ago, with "rage in his belly"--against the NATO counterarming decision, greater defense expenditures and additional arms exports. Even though many a Social Democrat heartily agreed with Hansen, he managed to alienate even his political partisans with his rough language. Except for Hansen cronies Manfred Coppik and Klaus Thuesing, no one felt like accusing his own government of "political filth" and "obvious reluctance and evident incapability of conducting politics of morality and common sense."

The fraction leadership reacted hysterically, not unlike a communist cadre rather than a democratic people's party: the same day the KONKRET article was published, Herbert Wehner summoned the fraction to an extraordinary meeting. Without much ceremony and with only one dissenting vote, Hansen was reprimanded for behavior damaging to the party. Beyond that, he is now threatened with exclusion from the SPD, an action which could mean the founding of a new socialist party. Says fraction chief Wehner about Hansen's future: "If we could be spared that kind of a future, it would be well and good."

Apparently the historical parallel with 1914 is lost on Wehner, who is otherwise well versed in history. Then too there was a divisive fight over the party's relationship with the armed forces and the odium of irresponsibility. At the outbreak of World War I, most SPD delegates in the Reichstag voted for funds to finance the Kaiser's war because they did not want to be known as "unpatriotic." A small group voted against it, because it did not wish to deviate from its pacifist principles; 3 years later it became the "Independent SPD" and split from the main party.

The manner in which left and right wingers quarreled in the Hansen affair is an indication of the deep division within the SPD even today. Hansen called his colleagues' behavior "somewhat degenerate" and described them as sycophants: "Don't we have anything but painted corpses running around in the Bundestag?" Rightwinger Guenter Topmann, a retired criminal police inspector, replied in kind: "It looks as though he represents all the mentally disturbed individuals in the Bundestag." Locksmith and union member Adolf Stockleben even hinted at violence: "If someone had acted like that in our union council, he would have felt a fist in his face."

But the problem has not been solved by giving the colleague a dressing down. Because the leftwingers are not the only ones who want to impart new credibility to the part decade's peace politics and, without making odious compromises, to rejuvenate them. Says Willy Brandt: "We would all be more than delighted if we could be pacifists not only by conviction but also in practical politics."

FOR OFFICIAL USE ONLY

Until the present, the resolutions of the Berlin SPD party conference of December 1979 are still in force. They provide that "the basis for national defense lies in creating conditions for international detente"; also, that in establishing an equilibrium between East and West "arms control and arms reduction should have unequivocal political priority." But there is considerable "contradiction and controversy" between these goals and the real life situation, says SPD Bundestag member Karsten Voigt.

At the time that the party agreed with the stationing of new American medium range missiles in Europe, there was still hope that the expectations tied to this (ratification of SALT II and extended negotiations between the super powers) would be fulfilled. But there is no such understanding now between Moscow and Washington, where the new Reagan administration openly preaches "arms buildup," says Voigt. In a confidential position paper, the former head of the Young Socialists considers it "legitimate" to argue whether Bonn should not suspend its vote in favor of a NATO counterarming until a new SALT agreement is concluded.

The Way Genscher Treats the SPD In Disgraceful

However, on this point there is no kidding around with the chancellor, who sees in it a danger to the military balance. Said Schmidt in addressing the fraction: "The Russians keep building more and more missiles which are aimed at us." Nor would FDP chief Genscher have anything to do with abandoning the NATO decision: "Our place is on the side of the Americans."

Such smart sayings are an additional source of irritation for the SPD, because the colleagues still have not forgiven Genscher for dictating the conditions for a coalition after the heady 10-percent election success of the FDP. In Herbert Wehner's words: "It is a two-digit mood of euphoria." And they also blame him for piously protecting the chancellor against attacks by his colleagues, when actually he is seeking to compound Schmidt's problems.

With his attempts at meddling in SPD matters (says a highly placed CDU functionary about the FDP chief: "The way he treats the SPD is a disgrace") the foreign minister further exacerbates the mood within the coalition. Helmut Schmidt is the primary target of this irritation.

Since last November's changes in the government friction between the parties has been on the increase, and not only about differences concerning the arms business and arms control:

-- in their joint resolution the FDP insisted that union representatives in the supervisory board not be appointed, but elected by the workers. Schmidt agreed and thereby earned the scorn of the DGB.

-- in energy policy, it is much more difficult for the chancellor to obtain a limited nuclear energy buildup in his own ranks than it is for his partner Hans-Dietrich Genscher.

FOR OFFICIAL USE ONLY

-- in trade policies, FDP Minister for Economics Otto Graf Lambsdorff, just like Schmidt, does not wish to fight the recession with additional state subsidies (trade stimulation programs), despite threatening unemployment for 1.5 million workers. By contrast, influential SPD politicians fear that without such support "conditions like in England" might arise (in the words of economic expert Wolfgang Roth).

Next spring this fractured unity will be further tested by two elections: during the Hesse communal elections in March and the overall election of the Berlin house of delegates on 10 May. Should the Frankfurt liberals swing toward CDU Mayor Walter Wallmann or in Berlin toward Union chief Richard von Weizsaecker, this could spell the end of the Bonn coalition. Even now the colleagues on the Rhine and on the Spree are irritated by the way Berlin's FDP obstructionist Hermann Oxfort is getting chummy with the Christian Union by way of rightwing pronouncements and criticism of the SPD.

Until the Berlin elections, the CDU/CSU will attempt through persistent pressure in Bonn to keep the SPD and FDP from calming down. the SPD's VORWAERTS is already issuing warnings that the party must not "lend its store of commonalities freely to a public dismantling." Such initiatives, it continues, as the budget motion by the 24 are a "free lunch" for the Christian Union. Because the opposition sees especially in the area of defense a potential weak point for the government coalition, and it sees in the embattled defense minister Hans Apel the weakest link in the chain. The way they figure it, a resignation by the minister of defense only a few months after the sacrificial departure by the minister of justice and "chancellor crown prince", Hans-Jochen Vogel, for the Schoeneberg city hall would demolish the coalition once and for all.

This is not Apel's first experience as a touchstone for the government coalition. When in 1977 the then finance minister, Apel, felt that Chancellor Schmidt had doublecrossed him during the coalition debate about the value added tax, he refrained from resigning solely because he cared about the integrity of the coalition. Said Apel at the time: "Had I resigned, the coalition would probably have been shaken." As he confided to an advisor, he is today too "ready to stick it out, though beset with self doubt." It will not be easy; the way SPD defense expert Horst Jungmann expresses it, "anyone who has lasted as a minister for more than 2 years begins to sense how the long-prepared noose is being tightened."

Apel has been in office at the Hardthoehe for 3 years, and he cannot check off any of the burning problems in his area as having been solved:

-- a DM 1.3 billion cost overrun in financing the MRCA Tornado multiple-purpose aircraft must still be satisfied with all means at his disposals, even at the expense of other armament projects. Apel for instance no longer wants a completely new design for the joint German-French battle tank 90 ("Napoleon"); instead, he wants a more cost-effective modification and improvement of the Leopard II, at the risk of dissatisfaction in Paris;

-- The TKF 90 tactical fighter for the 1990s too is dead as an all-German project. The Hardthoehe now leans toward the purchase of a foreign product;

FOR OFFICIAL USE ONLY

— an audit of the defense budget in March will show whether anything at all is left for financing. Despite a 6.2 percent increase in his overall 1981 budget Apel is not sure even now whether a supplementary budget allocation will not be necessary;

— it is questionable whether the continuing arguments about tradition and public soldiers' swearing-in ceremonies will be settled after a hearing planned for April. The generals keep pushing for pomp and circumstance. Critics like former Bundeswehr reformer Wolf Graf Baudissin do not consider the "decorative-mystical" performances of young recruits or the new medals a suitable means for integrating the armed forces into the overall society. Apel has already brought the CDU's scorn upon himself because he has prohibited any spectacular events by the Bundeswehr prior to the hearing. In parliament he was ridiculed by soldiers in the spectators seats for venturing the pronouncement that "barracks are public places too." If this were true, there may not have been any uproar like that in Bremen and Bonn;

— the promotion freeze, a source of continuing frustration among professional soldiers, is considered "unsolvable" even by sympathetic experts in view of lack of funds;

-- finally, only Apel knows how the mandatory strength of 500,000 men will be reached at the end of the 1980s, when the results of the "pill" kick will exert its influence upon available draftees. A much discussed proposed solution: draft women into the armed forces.

More than anything else, the badly served Apel has been unsuccessful in inspiring military and civilian personnel in his ministry to loyal collaboration. Among other things, the minister was kept in the dark for months before he was told the entire extent of the Tornado affair. Army Chief of Staff Hans Poepel played a confusing game with Apel concerning the required number of Leo-2 tanks—whether it was 1,500 or 1,800, thus embarrassing the minister before the defense committee with contradictory data. The cool man from Hamburg remains unloved by his generals; the relationship gains nothing at all from the fact that in private conversations he refers to some of them as "idiots."

It cannot be excluded that in the hidebound defense bureaucracy there will not be a repetition of the Tornado affair, if for instance the value of the dollar and inflation should drive the cost of the airborne early warning, SWACS system above the proposed DM 1.5 billion, or if the production of the Roland antiaircraft missile does not proceed as desired.

For the moment, the Union strategy's lever against Apel remains the expensive, accident-plagued Tornado fighter. The opposition wants to reveal embarrassing details in an investigative committee: was Apel aware of the financial crisis only as late as November 1980? One of the minister's confidants worries already: "He will never come off this particular horse in one piece." It certainly has already kicked him several times.

COPYRIGHT 1981 Gruner + Jahr AG & Co.

9273
CSO: 3103

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FEDERAL REPUBLIC OF GERMANY

POLL SHOWS CDU AHEAD IN WEST BERLIN

Hamburg STERN in German 29 Jan 81 p 15

[Text] Berliners have an amazing trust in Hans-Jochen Vogel. Scarcely has he installed his "transitional Senat" on the shambles of the social-liberals with unknown emergency personnel, than 38 percent of the West Berliners say they want this Social Democrat from Bonn to continue as the "man in power" even after the new elections that everyone wants. This is true in spite of the fact that at the moment only 28 percent would vote SPD, and barely 20 percent think the Social Democrats will win the election.

The results of the rapid* poll taken by the Allensbach Demoscopic Institute for STERN on Friday and Saturday of last week are both contradictory and informative. Seventy-one percent of the registered voters favor new elections "as soon as possible." Only 12 percent want to wait until 1983 for the "normal" election time. The public's anger is too great over the entanglement of people and offices in scandals involving millions of marks. Finally--as the STERN poll shows further--only 2 percent were "very satisfied" with the Stobbe Senat, while a total of 21 percent were satisfied "in general." But 33 percent were "not particularly satisfied," and 39 percent were "not satisfied at all."

It is not surprising, then, that if the elections were held as early as next Sunday, only 28 percent would vote for the SPD (election results in March, 1979: 42.7 percent), while 49 percent would pick the CDU (1979 results: 44.4 percent).

But it is surprising that the FDP comes out so well with 9 percent, even though it was, in the person of former Mayor and industrial Senator Wolfgang Lueder, deeply involved in the Garski scandal, and even though the lonely "away from the SPD" policy of its rightwing representative, Hermann Oxfort, has caused much discontent among friends of the party.

This "snapshot" of what the public immediately favors and does not favor that appeared in the "Sunday Question" column should nevertheless be discounted a little. First of all, the Christian Democrats and the "Alternative List," which did strikingly well with 13 percent, have actually carried out a complete election campaign with their successful collection of signatures for a referendum on early

*A representative cross-section of the West Berlin population, 18 and over, was polled (527 interviews).

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

elections. And then, too, the new elections will not be held next Sunday, but at the earliest in mid-June.

Therefore it will depend upon whether the Christian Democrat, Richard von Weizsaecker, can hold and increase his momentary bare confidence majority that has fallen to him through the collapse of the Stobbe Senat. Or whether the Social Democrat, Hans-Jochen Vogel, with his transition government, will show himself worthy of the advance confidence that has been placed in him, and whether he will make the SPD attractive for more Berliners.

Interpretation of the poll results clearly shows who must seek what where, and who must catch up where: Those under 44 years of age are more in favor of Vogel; those over 45 and the senior citizens have more confidence in Weizsaecker.

The West Berliners know very well that the SPD leadership did not send such a valuable man as Vogel just for their sake alone: Only 27 percent feel that the difficulties in their city will not have an effect on the Federal Republic, while 44 percent believe that the Berlin Senat crisis is weakening the SPD/FDP coalition in Bonn.

1. Whom would you prefer as mayor of Berlin? Christian Democrat Richard von Weizsaecker, or Social Democrat Hans-John Vogel?

	<u>Total</u>	<u>Men</u>	<u>Women</u>	<u>18-44 years</u>	<u>45 and older</u>
von Weizsaecker	39	40	38	25	50
Vogel	38	41	36	48	30
Undecided	23	19	26	27	20

2. If you had the choice here in Berlin between a government of Social Democrats and Free Democrats and a government of Christian Democrats and Free Democrats: What would you prefer?

	<u>Total</u>	<u>Men</u>	<u>Women</u>	<u>18-44 years</u>	<u>45 and older</u>
Prefer CDU/FDP government	41	43	40	31	50
Prefer SPD/FDP government	39	41	38	49	31
Undecided	20	16	22	20	19

3. If elections for the Berlin legislature were to take place, which party would you vote for?

	<u>Total</u>	<u>Election Results</u>		<u>Men</u>	<u>Women</u>	<u>18-44</u>	<u>44-</u>
		<u>3 March 1979</u>					
CDU	49	(44.4)		46	52	33	61
SPD	28	(42.7)		27	28	29	27
FDP	9	(8.1)		9	9	8	10
Alternative list	13	(-)		17	10	29	2
Other	1	(4.8)		1	1	1	-

FOR OFFICIAL USE ONLY

4. Which party do you think will win the election and name the mayor, the CDU or the SPD?

	<u>Total</u>	<u>Men</u>	<u>Women</u>	<u>18-44 years</u>	<u>45 and older</u>
CDU	52	57	48	51	53
SPD	20	19	21	20	19
Undecided, don't know	28	24	31	29	28

COPYRIGHT: 1981 Gruner + Jahr AG & Co.

9124

CSO: 3103

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FEDERAL REPUBLIC OF GERMANY

JOURNAL PROBES MOTIVES OF RIOTING YOUTH

Hamburg STERN in German 12 Feb 81 pp 27-28

[Article by Heinrich Jaenecke: "They Throw Rocks and Look for Love"]

[Text] During a television discussion at the midnight hour, Alfons Pawelczyk, Hamburg's senator of the interior, admitted his helplessness concerning youth riots: "How should I as a politician know where it is coming from when even the parents and the schools do not know? And how are adults to provide orientation for young people when they themselves are looking for orientation?"

The candid remark was pleasantly different from the stereotyped phrases that are used by responsible public officials in such cases. Because the world of the adults in the FRG is indeed experiencing a mixture of helplessness, confusion and barely suppressed rage in its confrontation with a militant youth which has emerged from its self-imposed ghetto to attack the "shit state."

To be sure, a youth protest movement has been in existence for a decade and a half and it has left considerable traces in society; nevertheless, what has been happening since last year in street battles in Berlin, Zurich, Bremen, Amsterdam and elsewhere is something new. No longer does it have anything to do with social reform or with political goals, no matter how radical.

It is an outbreak of undisguised, unbridled violence. It finds satisfaction within itself, in mere destruction, in physical combat with the police. Any occasion is suitable for this elementary, anarchistic violence, whether it is a Bundeswehr pledge, Brokdorf or the occupation of a house. It does not care whether it discredits all these protest movements, which are certainly legitimate. The inherent motive is to destroy. Naturally, it also affects the antinuclear movement, which at one time originated in the adult world.

Nobody should say that there are only a few thousand who are roaming the streets with crowbars and bricks, a small minority, and it is not worth getting all excited about it. Anybody who deals with young people and knows schools and universities knows that it is not so: The small minority represents a large aggression potential, recruiting from all social classes. Many young people, if not most of them, no longer feel that violence is evil.

Nevertheless, these bitter statements accomplish nothing at all. The real difficulty is finding the causes and solutions. The conservatives always recommend strict "measures," the progressives only see the causes, from miserable

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

living conditions to youth unemployment. Both are right: Naturally, there must be no street terror and, naturally, there must be an end to the scandalous land speculation.

But this juvenile rage cannot be defused by the police or through social legislation. The causes lie much deeper, buried in layers that have not been reached by politics or the schools. The cause is society itself, because this youth is its product.

"The fear of youth produces fear because it is also our fear." This sentence is written in an investigation by the Swiss Youth Commission, which delved into the causes of the Zurich riots. The conclusions that were drawn can also be applied to Germany. In the opinion of the Swiss, the causes for juvenile aggression are the isolation of the individual, the pluralistic industrial society, the technicalized environment. As a result, elementary emotional needs can no longer be satisfied and the individual is degraded, becoming a production factor. Many adults are just as overpowered by this feeling of isolation as their children are. The difference is, adults do not reach for rocks but they drown their loneliness in alcohol or they become resigned.

Every psychologist knows that aggressiveness stems from an unfulfilled longing for warmth, security and self-confidence. The young generation must have lacked all these things to a frightening degree. The Zurich analysis points to the fact that today's 20-year-olds grew up during the period of wild economic growth and frenzied consumption. It was a time when the family as an institution was questioned, when the parents themselves were "very helpless because of problems in life that they had not yet overcome," "unable to show genuine affection to their children."

These children grew up during a time when everything seemed possible, everything seemed attainable and everything seemed permissible, and suddenly they were facing a world that was entirely different: cold, impersonal, rejective. Even universities proved to be a nightmare although their fathers had raved about them.

Insecure, not easily encumbered, isolated--for this generation aggression against the environment became a way of life. "For the rampaging youth," the Zurich analysis states, "violence is an expression of a desperate situation and a desperate emotional state." And: "The goal of his rebellion is actually, among other things, to find peace and order, in other words, to find his place in society so that he can fulfill himself."

In view of the brutality in the streets, many people may feel that this sentence is an insult, and, certainly, no police president will be served with this psychological insight. But if we are looking for answers, this is the only area where they can be found. Needed is a discussion that does not stop at the question: How can we restore peace in the streets as quickly as possible?

Such a discussion must remove taboos, also taboos on the left. After all, if everybody agrees that these raving children lacked warmth, security and love, in other words, elementary emotional values, the left must also ask itself whether its alienating rationalism did not contribute as much as the industrial world to the fact that these values became a scarce commodity. There is a positive side to broken windowpanes: They force us to think.

COPYRIGHT: 1981 Gruner + Jahr AG & Co.

8991
CSO: 3103

11

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FEDERAL REPUBLIC OF GERMANY

HOUSING MINISTER ON HOUSING, REMEDIES

Hamburg STERN in German 22 Jan 81 pp 123-124

[Interview with Minister for Regional Planning, Housing and City Planning Dieter Haack by Kurt Breme and Werner D'hein: "We Are Working on Progressive Rents"]

[Text] STERN: Mr Minister, how great is the apartment shortage in the FRG?

Haack: It cannot be precisely expressed in numbers. In the big cities, the demand for apartments has been on the increase for about 2 years. Young and old are flooding the housing market to the same extent as families with children and the handicapped. The Federal Government, Laender and communities must deal with this problem jointly.

STERN: Privately financed housing construction is just about dead. During 1973, 175,000 apartments were built--last year about 20,000. Why is no one interested in making investments in this area any more?

Haack: Many investors made their investments during the early 1970s in anticipation of high inflation rates. Land, construction and financing costs were lower than they are today. At present, private or institutional investors can hardly look for a return, because they would have to charge about DM 15 per square meter. Nobody can afford that. We must therefore look for a way on the one hand to make public support more efficient and on the other to create new incentives for private investment.

STERN: In that case, please tell us how we might recapture the German life insurance companies which formerly pumped billions into housing construction, as investors.

Haack: To guarantee the insurance companies a calculable return on their investment in housing construction, we are planning progressive rentals...

STERN: ...in which a renter is informed of rent increases in future years as soon as he moves into an apartment...

Haack: ...correct. This will enable the insurers to visualize probable returns on their investments for the first 10-15 years on the basis of programmed rent increases. In addition, we want to create investment incentives by decontrolling the rent increase procedure and by introducing a compulsory rental index.

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

STERN: Many politicians believe that exaggerated rent control has chased investors out of the market. Do you share their opinion?

Haack: I do not, actually. But I cannot deny that such arguments have played a psychological part in the matter. Nevertheless, we must not do away with rent control; it is one of the pillars of our social security system.

STERN: Such concepts as decontrol of the rent increase procedure, progressive rentals, and indexed rents all seem to come under the heading of "a greater housing market." Will that not hurt mostly the wrong people, namely the small-income citizens?

Haack: I do not believe so. After all, privately financed housing construction to date was essentially directed at the higher bracket earners as well. For lower income groups we still have public housing construction and rent supports.

STERN: But only one out of every five of those entitled to apply for public housing actually obtains it. Does that indicate bankruptcy for housing construction policies practiced to date?

Haack: Not at all. We must take into account the fact that renters now have greater expectations of their housing. Increased demands mean greater costs, as a result of which we are producing fewer housing units than in the past with the funds at our disposal. Added to this is of course the overall cost increase.

STERN: How are the approximately DM 20 billion spent which the government uses to support housing construction?

Haack: About 4 million are put into direct support of new construction. More than 5 billion are devoted to home ownership, per paragraph 7b of the income tax law; this is new construction also. Rent supports, which are assuming an increasingly important function, amount to about 2 billion. Added to all that are building loan premiums, support for modernization of old buildings, energy savings supports or income tax deductions for land purchases for the purpose of home ownership. That is roughly how the DM 20 billion are spent.

STERN: You have the intention of collecting supplementary rentals from "non-entitled" renters in public housing. Will that result in apartments becoming available for those entitled to them?

Haack: What concerns us is the justice in making allocations. Those who have long since earned more than the allowable maximum and still occupy public housing should pay more rent. These supplemental rents should then be returned to the public housing fund for appropriate purposes. But we would not intend to use this means to have anyone evicted from their apartments.

STERN: Have the Laender not declined to go along with this?

Haack: The Laender with CDU/CSU governments are more or less against it at present. This is surprising, since Laender like Bavaria had been urging a quick introduction of this tax.

STERN: Another reason for the present rental apartment crisis is the horrible cost of land. However, in the big cities we can see great numbers of vacant lots

FOR OFFICIAL USE ONLY

in streets of attached houses. Is there any way in which communities could be made to acquire such lots for the purpose of construction?

Haack: We are indeed attempting to make such land, insofar as it is being held off the market for speculative reasons, available for construction by improving building conditions for communities.

STERN: You have also spoken about higher real estate taxes for land suitable for construction. How great will be the difference between present and proposed real estate taxes?

Haack: No formal decision has been made on this; it is under study by the ministries concerned. The first thing we must determine is whether such a tax would indeed serve to "mobilize" those lots.

STERN: Your intention is, jointly with the Federal Laender, to stop the galloping building costs.

Haack: We intend in different Laender to support construction of some houses or apartment buildings, on the assumption that there are no such things as building codes or standards, apart from statics principles or insulation requirements. That is how we hope to determine experimentally whether high building costs are really caused by standards and building costs. I expect some interesting results from this.

STERN: There has been some activity in the last few years in the area of renovation of old buildings. Can we expect in the near future a renovation directive for building owners who are deliberately letting a building fall apart in order to speculate on demolition and new construction?

Haack: There is no need to create such a directive; it is already in existence, as is the building requirement, as a part of the Federal building law. Communities have been able to invoke modernization directives since 1977.

STERN: During the middle of the 1980s, housing market problems will become still more urgent, when the high birth rate age groups come on the scene. What preparations are being made for this by the Federal, Laender and community governments?

Haack: I am all for giving a greater share of the responsibility to the communities, because they are most aware of the nature of their problems. The Federal support system must permit a more flexible and better differentiated use of resources locally.

STERN: This would make you the first Federal minister to voluntarily relinquish some of his jurisdiction...

Haack: ...that depends on what you understand by "jurisdiction." The Federal Government does not want to duck its responsibilities. What we are concerned with is that housing construction problems be solved in a more efficient manner--especially with respect to the 1980s.

COPYRIGHT: 1981 Gruner + Jahr AG & Co.

9273
CSO: 3103

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

GISCARD'S POLITICAL ENEMIES PRESS CRITICISM OF HIM

Paris LE NOUVEL OBSERVATEUR in French 2 Feb 81 pp 26-27

[Articles under the heading "The Man Who Wanted to Be King--The President Under Crossfire" entitled "Pierre Boutang: 'A Usurper In the Service of Satan'" (by Jean-Paul Enthoven), "Thomas Ferenczi: 'A Champion of Inequality'" (by Thierry Pfister), "Roger-Gerard Schwartzberg: 'Resurrection of the Ancien Regime'," and "Alain Duhamel: 'Four-armed Vishnu'"]

[Text] With Pierre Boutang's mortar, Thomas Ferenczi's telescopic sight rifle, Roger-Gerard Schwartzberg's bazooka and Alain Duhamel's blowgun in bookstore windows, Giscard does not risk "catching cold" this winter.

Pierre Boutang: "A Usurper in the Service of Satan"

A king? An old-line Maurras follower strongly reproaches him for the treachery of not being one. This is an unusual Maurras follower, to be sure, since we are talking about Pierre Boutang, that anarchistic-medieval duellist with inexhaustible reserves of spirit and hatred. So Boutang, who a royalist and liege man via the senior branch of his family, likes kings, and hates tyrants and their loathsome propensity for corrupting good "paternalistic power" all the more. In order to make this known, and to shout it out to a France which, if he is to be believed, Giscard is robbing of its destiny, Boutang has just written a satire (published by Hallier Books) of the kind that often springs up at the twilight of petty reigns, predictably seasoned with bile, vomit and onto-logical cursing.

But Boutang--with his Latin tags and his enthusiasm reminiscent of a different generation, and foaming at the mouth with the rhetoric of the grand old men (Bloy and Bernanos of course)--Boutang adds to all that a method which is solely his own: in order to aim straight, he aims low. And, to tell the truth, this fratricidal way he takes the law into his own hands piques your curiosity.

Let us get past the title--"Precis de Foutriquet [Little Nobody Handbook]"--which the enemy will puzzle at in vain. Boutang, who believes in the devil, has an obsession in common with certain Mormon sects of not naming him at all. So he borrows from last century's legitimists and communards the surname which they used to refer to Mr Thiers. This good joke right out of a high school graduating class conjures up damnation, a thunderbolt, and a big stick. In the context of this wild

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

triad, our author--who is better "inspired" when he talks about William Blake or Dostoyevski--sets up his booby trap and states in essence: "Foutriquet's" soul is concocted out of despicable traits. Let us specifically say, for caution's and fairness' sake, that these "despicable traits" are not exactly the ones that we here would attribute to the Elysee's current tenant.

For Giscard, according to Boutang, is guilty of everything, is a traitor and perjurer a thousand times over, and is a usurper. So Giscard is reproached equally for the tiniest and the worst things: his "Marseillaise that just crawls along" and his African policy, the Warsaw handshake and his friendship with Roger Vadim, his "mistresses," his "psychoanalysis at Lacan's" and his racketeering "in the service of Mammon." Juvenal and Agrippa d'Aubigne are summoned up by the portraitist who wants to paint a man for us who has "taken off his honor like people take off their clothes when it is too hot."

Furthermore, and above all, he reproaches "Foutriquet," freshly launched in Auvergne nobility, for not being "born," as was said in those times when Voltaire was flogged by the Prince of Rohant's lackeys. That is the amazing thing about a point of view: Giscard, the symbol of landowner Orleanism, almost becomes a stateless person in the light of heraldic genealogy--was he not born in Koblenz?--with his empty coat-of-arms, well off in chateaus but not in roots. Would Boutang be confusing the Giscardian Republic with "the Republic of Joanovici" to which he dedicated a revolting lampoon in 1949? You hardly have any doubt that is the case because his writing is so packed with mythical reappearances: "Democratie francaise [French Democracy]" is supposedly coded in masonic language, like Mozart's Requiem; the Veil law is supposedly the Mephistophelean invention of a man who "hates God and the cross," of a "knight of the abortion-house," the accomplice of a "Dulcinea of newborn death." Finally, the new "Bessarabian millionaire" has a love of filthy lucre, of diamonds and gold, which makes him a slave to the dictates of "merx" ("merchandise" in Latin). Let us make sure we are fully aware on this score: might not Boutang be using the president so he can palm off his hatred of the republic under a vaguely progressive banner?

Basically he has just written a book in order to proclaim that "Foutriquet" lies, corrupts "directly and indirectly," and "is burying France as its gravedigger." If it were not for the revolting smell drifting above his presentation, we might be able to take his word for it, especially since style is the least thing lacking in his hatred. But how can you avoid getting mud in your eye from reading something like this? Boutang has the right to prefer the father--who wrote a sparkling trifle on "la Monarchie interieure et la seigneurie de soi-meme [Internal Monarchy and Being Lord of Yourself]"--over the son, who claims, fortunately for him, not to read the books dedicated to him. But since waiting for the Cossacks and the Holy Spirit leaves him some free time, why does he not take advantage of it to root around in his subconscious? The cries "Montjoie" and "Saint-Denis" have sometimes saved France but never saved democracy.

Thomas Ferenczi: "A Champion of Inequality"

Seven years ago the left hesitated in the face of Giscard. The new president, it is true, did not spare any effort to win it over. By stripping the office of president of its burdensome protocol, he seemingly wanted to opt for modernity, in the style

FOR OFFICIAL USE ONLY

of a Pierre Elliott Trudeau or Olof Palme. Could Giscard--a man who paid attention to conceptual debate, respected the great names at universities, and believed in smoothing out tense situations--become someone you could deal with? After all, a man who claimed to be looking deep into France's eyes could not fail to catch the eye of all those who feel or believe they are the spokesmen for "the workers and the masses of the people." Disillusionment was not long in coming. For what Giscard was actually looking at was only his own reflection.

This in particular is what Thomas Ferenczi explains in his fascinating essay "le Prince au miroir [The Prince In the Mirror]" (Albin Michel). He himself was in a good position to appreciate how artificial the poses adopted by the new chief of state were. He was an accredited correspondent at the Elysee for LE MONDE and "covered" the first three years of the 7-year term in that privileged slot, up until the time when living under the same roof with the master of the house turned out to be impossible. Giscard's vaunted taste for intellectual debate did not go as far as putting up with critical analyses from a man who was trying to understand what really underlay the new government. So all the Elysee's doors were closed to LE MONDE's representative. Tired of this, he fell back on the cultural area where he has been able to observe the unfolding of another facet of Giscardian ideology to his heart's content.

For there does exist something which is specifically Giscardian. Alain Duhamel believes he has discovered what it is: the will to modernize. In his "Republique giscardienne [Giscardian Republic]" (Grasset), he goes into ecstasies over the signs the new government shows of rejecting whatever is old-fashioned. If there is one point that Bernard-Henri Levy has emphasized in timely fashion in his "Ideologie francaise [French Ideology]" (Grasset) it is the shallowness of that framework of analysis. Petain's "National Revolution" carried modernism and old-fashioned ways onward at the same time. And it is the same with Giscard's.

One of the left's errors at the beginning of the 7-year term was to confuse the new president's postures with rightist reformism as symbolized by General De Gaulle's plans for worker participation or Jacques Chaban-Delmas's speech on the "new society." This mistake is reminiscent of the one the left made at the time the 5th Republic was set up when it underestimated Gaullism's originality and wanted to make Gaullism out to be ersatz fascism. In the course of a concise description of the political reality of Giscardism, Thomas Ferenczi does a good job of laying out the fundamental difference which exists between these two "modernisms." The reformism embodied in Gaullism was borrowed from leftist ideology, in particular a certain amount of humanistic faith in progress. There is nothing of that kind in Giscard. On the contrary, his speeches express deep pessimism. You find in them a tone rather like Huxley's "Meilleur des mondes [Brave New World]," as if the crisis of the 1980's were allowing ideological currents which developed during the 1930's to spring up again.

For Giscard's modernism recalls that of the 1930's non-conformists. They too were convinced the world was in deep trouble; however, they thought they had the techniques with which they could root it out. This is what Paul Nizan called "the revolution of deliberate sacrifice," which Thomas Ferenczi clearly shows is the basic attitude of the current government. By substituting the specter of decline for a belief in progress, Giscard recommends a kind of "adaptation" which simply

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

masks the return of theories of inequality, which is to say, of elitism. We are witnessing the revenge of the historic right, not to mention the "new right," after the resounding defeat that historic right was dealt by General De Gaulle, a right confident of its preeminence and what it is clearly entitled to.

The most satisfying illustration provided by Ferenczi is taken from cultural policy carried out throughout the 7-year term. From the funeral oration for artistic patronage to the triumph of the Opera House, from the abandonment of the decentralization dear to Malraux to state sponsorship of the entertainment industry symbolized by Gaumont, the structures of a "Giscard system" are brought to light. By developing "an ideology of happiness via the possession of things and trusting that they will give pleasure," these structures allow society's cadres to recognize each other and they distract a large part of the population "which is offered, in the name of a deceptive diversity, a debased version of the products reserved for the elite." For the right's revenge on Gaullism is accompanied by a cultural transformation due in particular to the fact that the standards of ENA [National School of Administration] (and secondarily by the Ecole Polytechnique) are supplanting those of the Advanced Teacher Training School. Talking sociology and philosophy is now more appropriate than talking art or poetry. But most of all, virtuoso performance, knowing how to do things, and knowing the right thing to say now prevail over actual knowledge *per se*. This is a drift which the left did not immediately notice undoubtedly because it too protects itself from that drift only with difficulty.

Rober-Gerard Schwartzberg: "Resurrection of the Ancien Regime"

Roger-Gerard Schwartzberg, vice chairman of the Movement of Radicals of the Left and a deputy in the Strasbourg European Assembly but also a law professor, makes this observation in his book "The Uncompromising Right" (Flammarion):

"Giscard d'Estaing seems increasingly like the third king of the kings who have made the 5th Republic, like the head of a strange system of government, restoring what is almost the most out-of-date form of political organization for a society: absolute monarchy.

When all is said and done, what was the ancien regime form of absolute monarchy if it was not one man's having all powers of government? All power of the state resided in the king, and that power was considered indivisible. The new regime is a monopoly system. The Elysee, buttressed by its parliamentary majority, is accumulating and monopolizing all power. It is taking over all decision-making and is now in complete control.

The arbiter president has changed into the monarch president, transforming the prime minister into a majordomo and other ministers into people simply carrying out his wishes."

Alain Duhamel: "Four-armed Vishnu"

"France is governed by an elected sovereign, a republican monarch the next thing to being an enlightened despot," Alain Duhamel maintains in "La republique giscardienne" (Grasset). He goes on: "Frenchmen are barely aware of the fact that the president of their republic is far and away the most powerful Western head of government, the

FOR OFFICIAL USE ONLY

one with the most extensive powers within his nation's political system at his disposal.

There is no more doubt about Valery Giscard d'Estaing. The liberal patrician, who had kept his distance from what he termed "the solitary exercise of power" of the General's time, has been led--as were his predecessors and even perhaps to a greater extent than they, although for different reasons, by different means, and with a different style--to gain control more forcefully than ever for the Elysee. There you have the distinctive characteristic of the 5th Republic. The elected prince rules and governs at the same time. He is the Queen of England and Her Gracious Majesty's prime minister all wrapped up in one. It is the Liberal Empire in 7-year slices. It is Vishnu, the Brahman four-armed god: the first arm symbolizing the state and the nation, the second arm embodying governmental and administrative authority, the third for carrying on political and parliamentary activity, and the fourth to keep anti-government activities in check.

COPYRIGHT: 1981 "le Nouvel Observateur"

9631
CSO: 3100

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

FORTHCOMING ARIANE LAUNCH DATE NARROWED DOWN

Paris AIR & COSMOS in French 7 Feb 81 pp 44-46

[Article by Pierre Langereux: "The Ariane Launcher Can Still Become Operational at the End of 1981"]

[Text] The next and third test flight (L03) of the European Ariane launch vehicle carrying two satellites, Meteosat and Apple, will take place in late June 1981 or a little later in July 1981.

The exact date will be set around 20 March 1981 at the conclusion of the final tests of the Viking engine injectors of the launcher's first and second stages. These tests will indeed determine whether the modifications made since the summer of 1980 to the injectors are sufficient to insure the adequate operation of the Viking engine at the time of the next launch. This is to avoid the reappearance of the phenomenon which caused the destruction of the launch vehicle at the time of the second test flight (L02) on 23 May 1980 in French Guiana.

The CNES [National Center for Space Studies] and the ESA [European Space Agency] indeed announced once again, at the press conference held on 2 February 1981, that the third test flight of the launch vehicle was theoretically planned for the second half of June 1981.

But the exact date of the launch will be set only in a few weeks, Yves Sillard, director-general of the CNES, said. This means after the final trial of the five Viking engine injectors of the launch vehicle's first and second stages (L03).

The CNES has "complete confidence" in the improvements made on the injectors, declared Frederic d'Allest, director of the launch vehicle division of the CNES and president of Arianespace. He noted however, that "some uncertainty continues in connection with the time frame" for finalizing and evaluating the new injectors. "There may still be some difficulties there," Frederic d'Allest said, thereby reflecting the cautious optimism of the program heads.

These new injectors will indeed undergo trials with very rigorous criteria, stricter than those set earlier. These criteria anticipate notably that all the flight injectors will undergo an "operational trial" (stationary firing with real propellants) and no longer merely conventional testing (with water being used instead of propellants).

Those in charge of the program believe indeed that they have the solution to the problem this time, but they will not take any risks and will if necessary extend the experiment under way to be sure of the quality of the injectors slated for the

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

next flight. The continuing scheduling uncertainty stems exclusively, then, from the need for the time necessary to completely validate the modifications of the injectors of the next launch vehicle. The other systems of the L03 launcher have incidentally been the subject of detailed review which has not disclosed any significant difficulty, the CNES noted.

The precise date of the next launch has only relative importance at this stage of the test flights. The essential thing is first to carry out the launching successfully, which would qualify the launch vehicle.

Indeed, it is now sufficient to effect two successful firings (not necessarily consecutive ones) to be able to declare the Zriane launch vehicle flight-ready according to the present validation standards, Roger Vignelles, head of the Ariane program in the CNES, announced. Since the first test flight (L01), which was a complete success, is taken into account, it would theoretically be sufficient that either of the next two launches (L03 or L04) be equally successful to qualify the launch vehicle. Even a setback in one of these firings would not prejudice the validation of the launch vehicle, on condition however, that the cause of such setback established and the remedy known. But it is obvious, Roger Vignelles mentioned, that a setback at the fourth and final validation launching, even after a third successful firing, would "raise questions!"

First Operational Launch in December 1981

Assuming then that the next launch (L03) should indeed take place this summer and that it is successful, the CNES and the ESA have drawn up the following schedule:

The fourth and final test flight (L04) would take place in October 1981 with the MARECS A satellite and the first operational firing (L5) would occur in December 1981 with the Exosat satellite.

Then, in 1982, there are plans to effect an operational firing every 2 months, that is five firings a year, on the following dates: February 1982 (L6) with MARECS B and Sirio 2; April 1982 (L7) with Intelsat 5 (No 6) or ECS-1; in June 1982 (L8) with either of the preceding satellites; in October 1982 (L9) with Intelsat 5 (F7); and in December 1982 (L10) with Intelsat 5 (F8).

A Year Behind

This schedule is still tentative. But even a delay of 1 to 2 months of the next test flight with reference to the June 1981 deadline would not affect the schedule of the operational flights, Raymond Orye, head of the Ariane program at the ESA, declared.

Furthermore, the consequences of the L02 launch's failure on operational flights have been very limited. Arianespace has certainly "lost" two potential American clients, but Intelsat converted its options into firm orders a month after the accident.

Under existing conditions, following the L02 launch's failure, putting the Ariane launcher into operation has then witnessed "somewhat less than a year's delay," Yves Sillard noted. The first operational flight is now set for the end of 1981 whereas it had initially been scheduled for early 1981.

FOR OFFICIAL USE ONLY

But this is the only one of the four initial goals set in July 1973 at the start of the Ariane program which failed to be met. The three others have been accomplished or will be, Yves Sillard noted:

1. The performances in orbit of geostationary transfer indeed reach 1,750 kilograms instead of 1,500 kilograms and the improvement potential of the launch vehicle is considerable:
2. The development cost anticipated as Fr 2.06 billion (January 1973 prices) with a contingency margin of 20 percent should hold. Considering the failure of the L02 launch, the present estimate of the cost of completion totals 115 percent of the initial total (that is, 15 percent of the contingency margin has been used up).
3. Finally, the recurrent cost of the launch vehicle is effectively competitive compared to conventional American launchers (the Delta and the Atlas-Centaur) and will be at "a very high level" compared to the reusable launch vehicle (the [American] Space Shuttle).

Fuel Instabilities

The cause of the second test flight's failure (L02) of the Ariane launch vehicle has now been clearly identified.

For 8 months six groups of experts from the CNES and the SEP [European Propellant Company] studied in detail the circumstances of the L02 launch's failure. They reached the conclusion that the accident was due solely to the consequences of the unexpected fuel instability at high frequencies which occurred shortly after takeoff (liftoff + 5.75 seconds) on one of the four Viking engines (engine D) of the first stage of the launch vehicle.

Involved was an intrinsic phenomenon of the engine which could incidentally be duplicated perfectly since then in the course of the new engine tests effected by the SEP beginning in June 1980.

The investigation has indeed clearly established that no outside cause was involved. All hypotheses other than that of the high-frequency instability have been rejected following studies and tests as not having caused the failure of the L02 flight. It was then neither the results of a disruption due to impurities in the propellants nor of foreign body in the injector. Neither was it a result of excessively hot propellants or of a cavitation of the pumps at startup. Nor was it a question of the sequence of engine startup or of interaction among the four engines when assembled in a cluster. As for the impact of the acoustical and dynamic environment of the engines resulting from the rate of firing at takeoff, it was considered marginal after tests on a mockup (built to a scale of 1/20) of the motorized launcher (microengines with real propellants) simulated the firing rate.

2,300 and 2,700 Hertz

This phenomenon of high-frequency combustion instability is reflected by rapid oscillations (between 2,000 and 5,000 cycles per second) of the pressure in the firebox of the engine's combustion chamber. These oscillations have appeared under certain operating conditions and in the case of some injector configurations when the engine does not have a sufficient "combustion stability margin" available.

FOR OFFICIAL USE ONLY

Abnormally high levels of acceleration occur in the engine as well as a modification of the thermal transfers in the injector able to cause its rapid destruction and thus that of the launch vehicle.

What is involved here is a conventional phenomenon of rocket engines with liquid propellants which has already been witnessed in France (Diamant, Coralie) and even in the United States (Saturn-5, LEM).

In the case of Ariane the phenomenon caused surprise, however, all the more so as it occurred after a very successful initial test flight and appeared in a Viking engine which has been undergoing tests for the past 10 years!

In practice this phenomenon had never occurred during the numerous (about 200) stationary tests made during the stages of development and improvement of the Viking engine.

The analyses and tests effected since the failure of the L02 launch have in fact made it possible to identify two critical frequencies generating destructive instabilities: One of them at a frequency of 2,300 hertz appeared in flight on the L02 launch vehicle while the other at 2,700 hertz surfaced only at the time of the new stationary test series made since September 1980.

The origin of these instabilities is still unknown for the time being even though it was thought that the instability at 2,300 hertz could be due to variations in the production of injectors. In contrast, the instability at 2,700 hertz is much more disconcerting but it is also anticipated by a warning signal (at 5,200 hertz) [sic].

The combustion instability at 2,300 hertz was reproduced under stationary conditions only in September 1980 by testing the injector of the L02 launcher (covered at sea) and then at the first trial of a injector slated for the L02 launcher. For the first time this made it possible to confirm the hypothesis of an insufficient margin of stability in some injectors of the Viking engines.

Those in charge of the program had then considered that they would be able to solve the problem merely by selecting injectors under more rigorous trial conditions than before. The tests showed that it was possible to identify the instability at 2,300 hertz because it is systematically preceded by a significant increase in the vibrations magnitude at 2,000 hertz, a phenomenon which could be duplicated on the same injector.

A selection procedure of flight injectors using a new (operational) trial method was then made. But following the tests made from September to November 1980, it then appeared that flight testing of the injectors without modification was not valid.

It seems indeed that a "decisive change in the engine's functioning appeared during assembly operations, startup, or testing," whose exact cause is still not clear.

This was reflected by the quasi-systematic appearance since September 1980 of the new instability at 2,700 hertz which could not so far be correlated either with the instability at 2,300 hertz or with variations in the production of the injectors. This instability at 2,700 hertz has even occurred on injectors which had earlier functioned normally under high pressures (above normal).

FOR OFFICIAL USE ONLY

Modifications of Injectors

It was thus necessary to modify the injectors to reduce their sensitivity to the combustion instabilities of high frequencies, both at 2,300 hertz and at 2,700 hertz.

Two types of modifications bearing on the increase in diameter (about 10 percent) of the propellants' injection apertures (N_2O_4 [nitrogen peroxide] and UDMH [Unsymmetrical Dimethyl Hydrazine]) were approved after already undergoing particularly rigorous stationary tests.

One of them was dissymmetrical to stagger the layers of injected propellants.

The other was symmetrical which appears the more promising.

These modifications apply to two types of injectors.

One of them involves nominal injectors.

The other consists in producing injectors "with fewer variations," that is, which are more likely to respond consistently to instabilities thanks to more rigorous manufacturing tolerances and through a slight modification of the injection apertures' location. But so far this configuration has brought few improvements to the phenomenon of instability.

The selection of the injectors' configuration earmarked for the next flight (L03) should occur within the next 6 weeks (in fact between 4 and 8 weeks) in the light of the results of the stationary tests carried out by the SEP.

Tests are continuing however on other operational modifications of the Viking engine and in particular on the addition of water (10 percent) in the UDMH. This technique, according to the SEP, would indeed be as effective as modifying the injection apertures concerning instabilities at 2,300 and 2,700 hertz.

So far the factors of combustion instabilities have always been solved, in France as in the United States, following engine modifications and more or less extensive tests. Thus, it took more than a year to correct the injectors of the Diamant launcher.

Through various devices, the solution consists in increasing the injector's margin of stability, that is, the extent of the nominal operational field (in terms of pressure and [propellant] mix ratio). But this demands many stationary tests and a relatively large degree of empiricism. For this phenomenon of instability of high-frequency combustion is still little understood. At present there is no satisfaction theory on the subject and the mechanisms of combustion involved are very difficult to reproduce in a computer model (especially on a radial injector).

The CNES has incidentally decided to undertake, beginning this year, a program of theoretical and experimental studies of high-frequency combustion instabilities that will be entrusted to ONERA [National Office for Aerospace Studies and Research] and in which the SEP will participate. Credits of Fr 15 million will be earmarked for this program which will last 3 years.

FOR OFFICIAL USE ONLY

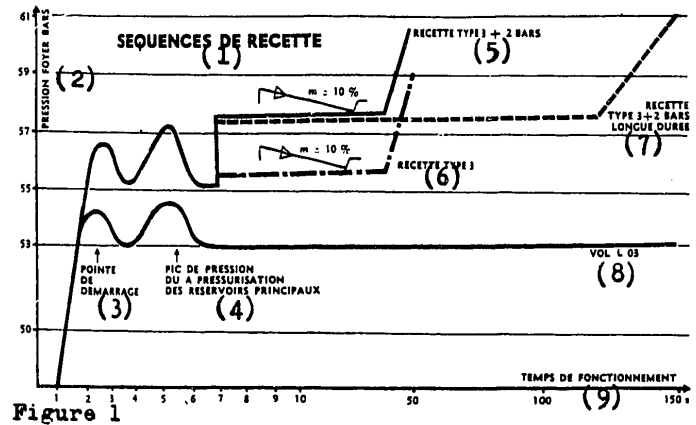


Figure 1. Sequences of trials applied to new injectors compared to the nominal operational sequence (at 53 bars) for the next launch (L03). Type 3 trials (at 55.5 bars) and type 3 + 2 bars (at 57.5 bars) involve a variation of the mix ratio (± 10 percent). At firing of long duration (100 seconds) is also planned.

Key:

- | | |
|---|---|
| 1. Sequence of trials | 6. Type 3 trials |
| 2. Firebox pressure (in bars) | 7. Type 3 trials + 2 bars (long duration) |
| 3. Startup peak | 8. L03 flight |
| 4. Pressure peak owing to the pressurization of the principal tanks | 9. Operational time (seconds) |
| 5. Type 3 trials + 2 bars | |

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

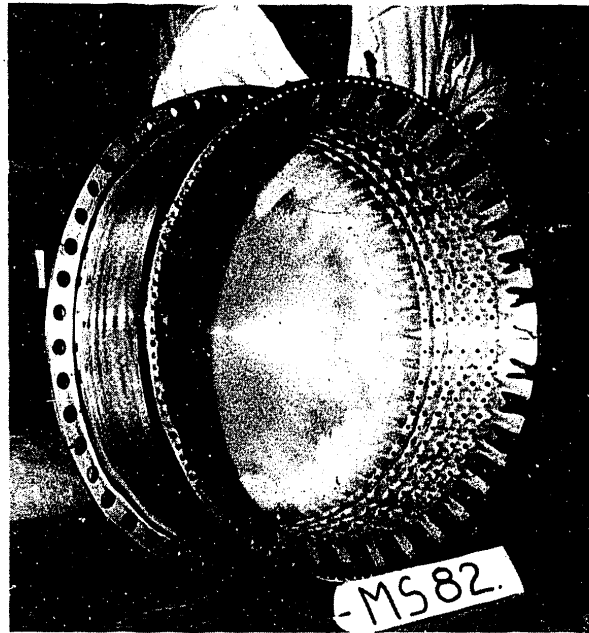


Figure 2. Modified injector ring of the Viking engine after undergoing stationary operational tests in January 1981. One can identify the six injector rings which include several hundred orifices. The injector includes radially an alternate series of large orifices ($4/10$ [cm]) and small orifices ($3/10$ [cm]) which inject respectively nitrogen peroxyde and UDMH [Unsymmetrical Dimethyl Hydrazine] into the combustion chamber. This test has not damaged the dome (background) nor the lower cone (marked with black traces through combustion) of the injector. It is these parts which were the first to be damaged by the combustion instability at the time of the L02 launch.

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

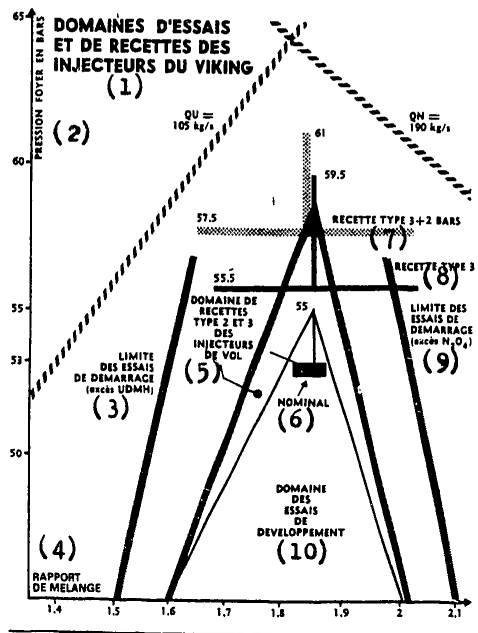


Figure 3

Figure 3. Fields of tests, trials, and flight of the Viking injectors. The development tests had until now made it possible to verify the operational conditions in a field (interior triangle) including the nominal conditions (combustion at 53 bars with a peak at 55 bars). Now the field of trials is extended (external triangle). The new trials were made at respectively 55.5 bars peaking at 59.5 bars (type 3) and at 57.5 bars peaking at 61 bars (type 3 + 2 bars) to validate injectors under extreme conditions. Startup tests have also been extended with mix ratios ranging from 1.5 to 2.1. The entire field explored in testing is indicated by the two upper curves.

Key:

- | | |
|--|---|
| 1. Fields of tests and trials of Viking injectors | 6. Nominal |
| 2. Firebox pressure (in bars) | 7. Type 3 trials + 2 bars |
| 3. Limit of startup tests (UDMH surplus) | 8. Type 3 trials |
| 4. Mix ratio | 9. Limit of the startup tests (N_2O_4 surplus) |
| 5. Field of types 2 and 3 trials of flight injectors | 10. Field of development tests |

COPYRIGHT: A. & C. 1981

2662

CSO: 3100

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

'CONTRADICTIONS' IN NATION'S ARMS EXPORT POLICY

Paris VALEURS ACTUELLES in French 9 Feb 81 pp 27-28

[Article by Michel Gurfinkiel: "Iraq-Paris' Clients"]

[Text] "The difficulties are beginning." That was the comment made last week by a French expert following the delivery of four Mirage F-1 aircraft to Iraq. These are "difficulties" to the extent that the delivery was simultaneously inevitable, insufficient, and can entail diplomatic complications for Paris.

Iraq ordered 60 Mirage interceptors involving two successive agreements (July 1977 and November 1979) one of them for 36 aircraft and the other for 24. The present delivery concerns the first agreement. Thirty-two other Mirage planes are thus slated to be shipped to Baghdad shortly. "Within a few weeks," a spokesman for the French foreign ministry specified on 2 February 1981.

These planes represent only part of the strategic purchases effected in France by Saddam Hussein's regime. The Iraqis have indeed signed an agreement for 100 heavy AMX 30 tanks and 50 light AMX 10 armored vehicles, 40 Puma transport helicopters, and 20 light Gazel helicopters.

Negotiations are also underway regarding the Mirage 2000, the Alpha-Jet training aircraft (which France coproduces with the Federal Republic of Germany), and naval equipment. Finally, France has provided the Osirak nuclear reactor (which the Iraqis renamed Tammuz) and its fuel. This represents the transfer of "civilian" technology which under certain conditions could be transformed into military technology.

Such transactions with one of the principal oil-exporting countries initially appeared as an opportunity for the French economy (representing nearly 25 billion French francs' worth of exports in 1980). But they involve risks (see our issue of 12 January 1981), in the first place, that of dependence when the purpose is--the case with Iraq--to pay for oil imports by arms sale. For France's oil purchases are worth four times as much as its arms exports (25 percent of its oil bill).

The production capabilities of the French armaments industry do not compensate for this fact. For example, the Iraqis envisioned in the initial days of their conflict with Iran purchasing antiaircraft missiles from France. They requested the "urgent" shipment of 200 Crotale missile batteries to replace Soviet-made batteries destroyed by the Iranian air force. France cannot deliver at this rate: The French army itself has received only 16 Crotale missile batteries in 3 years.

FOR OFFICIAL USE ONLY

For 5 years now the Iraqis have been steadily reducing the Soviet Union's share in their arms shipments which fell from over 90 percent to some 70 percent. But among Baghdad's new Western suppliers France is also in competition with Italy or even Brazil and accounts for only about 13 percent of Iraq's purchases.

The capability for technical modernization of French military products is also limited. The Dassault firm has indeed produced the prototype of the Mirage 4000, "the plane of the 1990's," but does not have it on the production line. Its cost would be prohibitive for the French armed forces (Riyadh has hinted that a Saudi option was "possible" but has not confirmed its intentions).

Taken together these factors have placed France in a touchy situation and explain the supply of the Mirage F-1 planes to Iraq. But they explain it only in part.

The agreements signed by the French Government with Iraq anticipated that the deliveries would be made under all circumstances and any conditions. In other words, Paris could have advanced only one reason for not making such a delivery, namely, an embargo decided on by the UN Security Council against Iraq. However, Baghdad, even though the aggressor against Iran, has not been condemned by the United Nations. France thus had to deliver or lose its credit.

Furthermore, Iraq has found in Saudi Arabia, if not an ally in the war, at least a friend. France, having recently concluded an agreement worth 16 billion francs for supplying equipment (notably naval) to Saudi Arabia, could have jeopardized the Saudi deal or even others by reneging on an earlier agreement with Iraq.

Diplomatically, this delivery which so far does not change the balance of forces favoring Iraq in any way (the planes in question will be stored in Jordan) evidently compromises France's proclaimed "neutrality" in the Persian Gulf conflict.

All the French Government could do then was to authorize the shipment to Iran of the fast patrol boats blocked in the shipyards of Cherbourg.

Jean Francois-Poncet, the French minister of foreign affairs, will however be hard put to make it credible that this twofold delivery (to Iraq and then to Iran) means a return to French "neutrality."

France used to enjoy a relatively strong position in the Iran of the Pahlavi dynasty owing to the fact that the imperial family and a part of the Iranian aristocracy had been raised in France or in French-speaking Switzerland. In 1978 President Valery Giscard d'Estaing however granted permission to the Ayatollah Ruhollah Khomeini to reside in exile from where he could direct the final assault against the Shah.

After February 1979, the Islamic Republic of Iran did not want to reward this attitude by honoring Franco-Iranian agreements made with the former regime. In 1980 the French started however to retrieve their position by delivering agricultural and pharmaceutical products and various medical and scientific materials in execution of agreements concluded before the embargo decreed by the United States.

These new advantages, offsetting in part those lost by France, are being threatened in turn. Before being monarchists, Khomeini partisans, or secular nationalists the Iranians are Iranians. They will forget all the less France's shipment of combat

FOR OFFICIAL USE ONLY

aircraft to Iraq, as it occurred while Paris still refused to deliver to Tehran the patrol boats which were 90 percent paid-for, stressing Iran's unilateral breaking of the agreements it had signed earlier with French enterprises.

France's proclaimed role as mediator in the Middle East, is losing all credibility. The French foreign ministry had at one time justified its embargo against Israel by its concern not to strengthen a "front-line country" and then by its disapproval of the Israeli military occupation of the West Bank, Gaza, and the Sinai. Today France is resupplying a country which is at war and which proclaims its resolve to annex Iranian territories which it managed to seize during the first few weeks of fighting. The contrast between the two situations is obvious.

Another element must also be factored in: That of the Tammuz nuclear center whose fuel France supplies.

On 30 September 1980 two Phantom fighter-bombers flew over the center (located 30 km from Baghdad) and bombed auxiliary installations. Claims were immediately made about an Israeli raid, for Israel like Iran is equipped with these American-built aircraft. In fact, however, beginning on 14 October 1980 Iran's President Abol Hasan Bani-Sadr claimed his country's responsibility when he said:

"We did not target the center on purpose. Rather, we were aiming at a neighboring facility--a refinery, I believe," he explained.

The hypothesis of an Israeli raid had been taken in earnest because Jerusalem considers that the real goal of the Tammuz nuclear center is to produce the "bomb of Islam," the bomb earmarked for the "supreme battle against Zionism."

The French authorities assert that all precautions have been taken to avoid the military application of the enriched uranium or plutonium consumed or produced by the Osirak-Tammuz reactor. Their arguments show deficiencies.

Thus, according to official spokesmen, the fuel slated for Iraq (13 kilograms of uranium whose shipment has not been confirmed but appears to have been effected a few days before the start of the Persian Gulf war) would be pre-irradiated and therefore unsuitable for the production of a bomb.

In fact, according to various experts, the operation would be limited to simple irradiation at the site of the Tammuz center itself when the uranium is loaded into the reactor. The fuel thus remains subject to diversion for military purposes at the price of dangerous manipulation which is unthinkable in a Western country but not in Baathist Iraq. This is all the more so true, as the individuals who may be sacrificed would experience the effects of nuclear contamination only after several days.

The French authorities also assert that they are working closely with the International Atomic Energy Agency in Vienna. That is correct. But in practice that agency cannot exercise surveillance in Iraq because of the wartime conditions there.

Finally, France cannot control Iraq's relations with other countries which have nuclear technology available. Baghdad has purchased from Italy a laboratory making possible, at an experimental stage, reprocessing plutonium as it is done in France at the La Hague plant. Reprocessed plutonium can be used for military purposes.

FOR OFFICIAL USE ONLY

French spokesmen explain that this method would not be viable. At the Tammuz center uranium is transformed into plutonium only at a rate of 7 percent compared to 97 percent in an ordinary-type French nuclear plant. However, a technician of the AEC [Atomic Energy Commission] noted:

"Our gravest error would be to underestimate the Iraqis. The interns whom Baghdad sends to our facilities are intelligent, patriotic, and hard-working.

If the shipment of 13 kilograms of uranium was indeed made late last summer, it involved only one of the two Osirak-Tammuz reactors. Another delivery should thus take place. This would be an important "test" of France's desire to collaborate with Iraq, more significant than the shipment of the Mirage aircraft.

COPYRIGHT: 1981 "Valeurs actuelles"

2662

CSO: 3100

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

WEAPONS MANUFACTURE QUALITY CONTROL MEASURES DESCRIBED

Paris ARMEES D'AUJOURD'HUI in French Jan-Feb 81 pp 30-31

[Article by Lucien Cruchant: "Quality Control"]

[Text] Gen engineer Lucien Cruchant was admitted to the Polytechnical School in 1947 and graduated from the National Advanced School of Maritime Engineering in 1953. He began his career with ECAN [Naval Construction and Weapons Establishment] in Ruelle in naval artillery and special missile manufacturing. Entering the SIAR [Industrial Supervision of Military Equipment Service] in 1964, he was successively named district head in the Regional Directorate of the Southeast and industrial deputy director in the Central Department, where he is currently in charge of quality control under the director of the SIAR.

Military users see on their equipment the perforated stamp symbolizing, as on the SIAR emblem, the three branches of the armed forces. This hallmark verifies that the equipment has been "inspected by the SIAR," to use the common expression. It is in fact evidence of acceptance, pronounced when the equipment is received, in keeping with contractual technical specifications. It is attached following the final equipment inspection, but is generally the conclusion of a process that began much further up the line in which inspections of materials and component parts represent only one aspect -- a major one, to be sure -- of the "assurance of quality."

Various Aspects of Quality Control

Once finished and before delivery to the armed forces, all materials are subjected to a final inspection, which includes verifications of conformity to specifications, functional tests, and if need be, operational tests including road tests for vehicles, firing tests for arms and munitions (samples taken from lots), and flight tests for aircraft.

While the final inspection is sufficient for some simple equipment, on the other hand, for most weapons, it would not be enough to guarantee the quality of materials if there had not first been preliminary manufacturing inspections of elements that cannot be inspected when the equipment is assembled: materials, pieces and component parts, subunits and equipment. This inspection also has to do with the

FOR OFFICIAL USE ONLY

execution of some manufacturing operations requiring special precautions: thermic treatment of metal structures, the welding of armor plate, pyrotechnical articles, and so on.

Responsibility for the completion of inspections belongs primarily to the manufacturer. Holding a contract approved by a technical directorate of the DGA [General Delegation for Military Equipment], the manufacturer must himself complete, during the manufacturing process, the proper verifications and tests on elements supplied from abroad and on finished items enabling him to make sure that such items meet contract specifications. He must present to the SIAr all documentation and results of inspections and tests performed.

The Industrial Supervision of Military Equipment Service (SIAr) has the task, within the DGA, of providing technical supervision of the manufacture of equipment and munitions in industry and of accepting (or receiving) such equipment for the government.

It has some 2,300 persons working throughout the national territory.

The SIAr "superimposes" its inspection on that of the manufacturer and his subcontractors, using different procedures depending on the effectiveness of the inspection performed by each manufacturer. Its officials oversee the completion of certain key operations and do probes. They themselves conduct the final inspections and test, particularly operational tests in the final stage for which, in some cases, they resort to the aid of specialized DGA testing centers.

And yet, while the inspection does make it possible to separate the wheat from the chaff, so to speak, it is better to take all appropriate preventive measures in the very beginning in order to turn out satisfactory material. The quality and cost of equipment benefit from this.

For operational tests of land weapons equipment, the SIAr has officers and noncommissioned officers in the infantry. It also receives aid from the Bourges Technical Establishment (ETBS) for firing tests of arms and munitions.

Flight tests of aircraft are made for the SIAr by the Flight Test Center (CEV).

The quality of a weapon is defined as its ability to meet the expressed need of the user -- that is, its ability to technically perform the task for which it is normally intended for what is deemed a sufficient period of time (of use or storage).

The growing complexity of weapons and weapons systems, reliability requirements and the high cost of equipment has led to a demand for ever greater mastery of all factors affecting obtention of the required quality in all phases of manufacturing.

Having assurance of quality for all personnel responsible for the manufacture of equipment and for all users: The expression also designates all measures taken and all the organization, means and methods involved in obtaining the required quality. It encompasses control.

FOR OFFICIAL USE ONLY

The military equipment quality control line brings in the staffs and technical directorates of the DGA as well as industrial designers for the definition of equipment, experimentation with prototypes and the qualifying of operational types. At this stage, the quality of definition is determined.

The manufacturer in charge of mass production is responsible for ensuring the quality of manufacturing, according to the definition approved by the technical directorate, of equipment delivered to the armed forces.

The SIAR's mission of quality control for manufacturers involves, in addition to its actions relating to equipment control, preventive actions at the level of the organizations, means and methods used by manufacturers. These actions are for the purpose of seeing that the manufacturer does in fact take all measures aimed at obtaining quality with respect to: the organization of tasks, preparation for and execution of work, updating dossiers of plans and working documents, control during manufacturing and final inspection, means of control and tests, the calibration of measuring instruments, separation of defective elements, use of technical data pointed out by users, the initiation of corrective action, handling, packing, and so on.

A new regulation (regulation concerning the obligations of equipment suppliers to the SIAR (ROFA) and regulations on quality control (RAQ)), set forth by the General Representative for Military Equipment at the beginning of 1980, spells out the rules that manufacturers must observe. The principles are simple and were already being largely applied, at the urging of the SIAR, by the principal equipment suppliers. This regulation presents the advantage of codifying "rules of good practice" and of supplying a new instrument for all manufacturers, as well as a new lever for the SIAR in its work of promoting quality in the armaments industry.

The method developed by the SIAR for this purpose is the "quality audit," the sounding of an enterprise or a sector of activity or certain aspects of its working methods in order to verify the application of rules and initiate improvements if need be. This is in-depth work which has beneficial effects for the quality of munitions and equipment.

Multinational Cooperation

In order to ensure quality control for equipment produced in cooperation with other countries, the SIAR has concluded reciprocity agreements with homologous foreign departments. The principle is that every national service should oversee manufacturing within its territory for the entire program and for procedures drawn up in common defining coordinated modes of action and technical exchanges between departments acting as partners.

In the case of Alpha-Jet, for example, the SIAR oversees all manufacturing of French industry and is responsible for the acceptance procedure for aircraft assembled in Toulouse (Colomiers) by Marcel-Dassault Aircraft-Breguet Aviation, and its German counterpart, the BWB-GP [expansion unknown], oversees the manufacturing of German industry and is responsible for the acceptance of planes assembled in Munich by Dornier.

COPYRIGHT: 1981 - Revue des forces armees francaises "Armees d'Aujourd'hui"

11,464
CSO: 3100

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

ELECTROMAGNETIC SIGNATURES STUDIES OUTLINED BY ENGINEERS

Paris ARMEES D'AUJOURD'HUI in French Jan-Feb 81 pp 36-37, 41

[Article by Engineers Philippe Gadenne, Alain Junchat, and Jean Uguen: "The Electromagnetic Signature--An Item of Growing Interest"]

[Excerpts] The effectiveness of a weapon, like the invulnerability of a target, experience considerable variations due to progress in technology. Where do we stand today in the determination of target signatures? The SCTI (Central Telecommunications and Information Division) exercises central control and coordinates technical matters in the fields of electronics and information science. The CELAR (Weapons Electronics Center), an establishment attached to the SCTI, is responsible for tests and evaluations of electronic equipment and information networks used for national defense, electronic simulation of systems, and major scientific computation undertakings. It employs 700 persons.

The constant improvement of techniques and the sophistication of measurement equipment have yielded increasingly precise knowledge on the behavior of targets and their environment. All of the data acquired in the entire electromagnetic spectrum, from UHF all the way to IR, going through the millimeter range, represent a particularly rich source of information.

A concentration of results in a data bank, being established under the CELAR, will facilitate the task of model, weapons, or weapons systems designers.

Toward Better Target Detection

Looking at equipment, combat can be subdivided into a series of confrontations between an aggressive element and a system charged with preventing it from accomplishing its mission.

In a defensive situation, the equipment units employed must be able to guarantee detection, identification, target selection, and weapons commitment functions until the weapon meets the target. These functions are performed in an ideal fashion if, at the end of this process, the target is hit with great effectiveness.

In an offensive situation, the equipment employed must be able to guarantee the functions connected with the commitment of the weapons system with the same

FOR OFFICIAL USE ONLY

efficiency until the complete effect has been obtained. These functions are performed in an ideal fashion if, at the end of the process, the result is achieved with sufficient efficiency and reliability.

It is as a matter of fact quite obvious that none of these functions is ever accomplished in an ideal fashion. Nobody has ever achieved 100-percent efficiency; nobody has ever achieved 100-percent invulnerability either. On the other hand, effectiveness like invulnerability are susceptible to considerable variations due to modifications in technique and technology.

One of the preponderant causes of these variations is the improvement in the performance of sensors situated in the processing chain. Now, in this field, the latest developments enable us to look forward to a real noticeable and rapid evolution of the situation which we have become familiar with in the recent past.

It is for example well known that the current evolution of radars should enable us to detect targets of ever smaller size while benefitting from a certain separation power between the target, the jamming, and the decoys.

Likewise, the evolution of IR sensors may well modify the night-fighting data on targets "camouflaged" in the current meaning of the term.

Likewise we are only now beginning to experiment with sensors that use millimeter waves and we are thus still having difficulty in figuring out what these waves are going to contribute in the way of new findings, particularly in the field of passive (hence, secret) detection.

Other examples might also be mentioned to illustrate a rapid evolution in the performances of sensors with respect to their targets. The above examples persuade us, by way of reciprocity, to examine the situation of targets with respect to the various sensors that might be found on the battlefield.

Decoding Target Signatures

Now, what was the situation here until very recently? Knowledge on phenomena involved was much more qualitative than really quantitative. That was not too bad because experience had enabled us to work out models which approximately reproduced the behavior of the elements of the weapons system.

With ever faster progress, prior experience is no longer available and we therefore must adapt not only to the needs of the present situation but also to the necessities of a situation characterized by a very rapid evolution.

Many things are now being done within the General Delegation for Armament. As part of its mission, CELAR was persuaded to concern itself actively with efforts dealing with target behavior with respect to sensors, what we call the signature of targets.

The signature of a target, we remember, is the mark of energy which it radiates, regardless of whether we are dealing with its own energy or whether we are dealing

FOR OFFICIAL USE ONLY

with a portion of the energy which was transmitted to it and which it reflects. This energy is essentially characterized by the intensity of this radiation as well as by its variations in the spectral and space-time fields.

Its analysis gives us a large number of parameters permitting us in a more or less refined manner to accomplish the following:

The extraction of the target from its environment,

A knowledge of its kinetics, that is, its speed, trajectory, attitude,

The exploration of its shape.

Access to a signature can be obtained according to two techniques:

The passive way which consists in analyzing the emission itself and the response to the natural illuminations of the target;

The active way which consists in analyzing the response of the target to the illumination caused by an emission system operating in conjunction with a detection and analysis system.

Considerable resources were devoted at the CELAR to these measures and they are illustrated below. We can see in particular measurements of the reflecting power of a tank on the outside base and measurements of the reflecting power of an airborne target in the particular case of proximity fuzes.

Likewise, the use of sensors depends on a good statistical knowledge enabling us to respond to the operational conditions encountered in an all-weather situation. This means that we must make measurements in frequency bands where the absorption is reduced ($3.4\text{--}5\text{ }\mu\text{m}$, $8\text{--}12\text{ }\mu\text{m}$).

Data Bank

Considering the rapid evolution of sensor performances, considering the growing volume of information relative to target signatures and the ever more exact and extensive knowledge on the characteristics of transmission channels situated between the target and the sensors, we can now look forward to addressing ourselves to the problem of designing future weapons systems in a manner coherent with the development of knowledge on the various elements. Will this actually come true?

Yes, if the designer can rapidly and easily get his hands on information concerning the state of the art at a given moment.

Yes, if the designer has an opportunity to improve the efficiency of the system which he is studying through better knowledge of the enemy target and if he can thus undertake the optimization of his system.

Yes, if the designer can test the vulnerability of the weapons system he is preparing through a knowledge of its own signature vis-a-vis the enemy.

FOR OFFICIAL USE ONLY

To make this information fully useful, it must also be easily and automatically accessible. It was thus decided to concentrate the available measurements and models in a data bank set up under CELAR.

With the help of signature data processing contained in it, the bank is being used in the design of weapons systems considered from the aspects of efficiency, secrecy, and decoying.

Under the heading of efficiency, it would thus be possible to get a better knowledge of the target's behavior in order to make a choice of weapon and to optimize it.

These two operations are generally performed by means of simulations capable of being worked out either in an analog fashion on test benches or in a purely numerical fashion on computers.

The increasingly extensive and precise knowledge of signature data will permit the refining of target models used for these simulations.

From the angle of secrecy and thanks to methods figured out by the research teams from the ONERA (National Office of Aerospace Studies and Research), it will furthermore be possible to locate the origins of signatures. In this case, working on the corresponding elements (change in shape, structure, or materials) will make it possible to improve target secrecy.

Parallel to that, the creation of false signatures, obtained either through the generation of a transmission on the level of the target, or through the creation of false targets (dropping chaff, for example) will help to decoy the detection system provided the signature thus created is sufficiently similar.

So far, knowledge on target signatures--regardless of whether they are ground, air, or maritime targets--revealed certain inadequacies.

Considerable resources have been gathered under the CELAR. Techniques developed here were perfected to make measurements, to process the measurement data, and to improve their accessibility. The elements already acquired are such as to renew our view of what will be possible tomorrow and consequently we get an idea of our concepts of camouflage, decoying, and jamming.

PHOTO CAPTIONS

[P 36, left center] Intended for active or passive measurements on ground targets. Technical characteristics: capacity 45 t; sight angles: azimuth 360°, elevation angle 0 to 17° or -40°; equipment: current 8-12 GHz, near future: 12-18 GHz, 94 GHz, IR (3-5 and 8-12); this assembly is to be completed by a base support unit to be used in measuring all attitudes of air targets with a weight of 15 t.

[P 36, top, right] Simulation of "C22" intercept by proximity fuse. Created in 1972, it is among the most important in Europe. Technical characteristics: Volume 3,600 m³ (25 x 12 x 12 m); range covered: 300 MHz--40 GHz (soon to be extended to 100 GHz). Main activities: measuring the overall reflecting power of targets

FOR OFFICIAL USE ONLY

(Surface Equivalent Radar); measurement and location of different contributors of SER; images with brilliant points (see photo); resolution power; several centimeters; precision 20 percent on Local SER of 0.0005 m^2 , Measurement of Doppler signature in near field (simulation of final phase of intercept of airborne targets by proximity fuse).

[P 37, bottom] Illustration, in coded form, of SER density of a missile mockup, analyzed in the Ku band. This target is here shown along its broadside. The analysis of its signature gives access to the following parameters: Length, presence of tail assembly and rudders, distance between these components.

[P 37, lower right, reading from top to bottom]
Engineer (category IIIA) Philippe Gadenne is a graduate of the National Electronics and Radio-Electricity School at Bordeaux; he got his M.S. in sciences and his PhD, 3rd cycle, in 1962. He is presently chief of the "hyperfrequency radiation measurement" section, "materials and components testing" division, and is responsible for the Radar area within the data bank.

Contract Engineer (category IA) Alain Junchat has a M.S. in sciences from the University of Nancy. He joined CELAR in 1975 where he is in charge of the optronics section. Directing the French Opaque station since 1979, he is in charge of the optronics field of the data bank. He is currently chief of the physical optics section under the "materials and components testing" division.

Armament Research and Techniques Engineer Jean Uguen graduated from the Technical College of the CAN in 1972. Assigned to CELAR, he is active in the hyperfrequency detection field. He is currently chief of the "future equipment" section, "materials and components testing" division, and he is in charge of millimeter activities and the data bank.

COPYRIGHT: 1981 - Revue des forces armees francaises "Armees d'Aujourd'hui"

5058

CSO: 3100

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

BRIEFS

PCF SEES INVASION POSSIBLE -- Should the USSR or any other socialist country invade Poland on the request of the PZPR, Giscard may decide to put the French Army "in a state of alert." A plan has already been formulated in the utmost secrecy by the general staff of the armed forces. Whatever they may be saying, the communists themselves do not exclude such an eventuality. The official communique of the Communist Party, drafted after acrimonious debates, is ready: unequivocal condemnation of the intervention with "revelations" on the role played by the Americans in the "manipulation of some Solidarity leaders. In such a case Marchais could even propose a kind of "mediation." Comment: The French secret services believe that the American Administration has informed the Kremlin of its plans should Poland be invaded: total economic blockade of Cuba, not excluding a military operation. [Text] [Paris LA LETTRE DE L'EXPANSION in French 9 Feb 81 p 3] 5157

CSO: 3100

END

FOR OFFICIAL USE ONLY